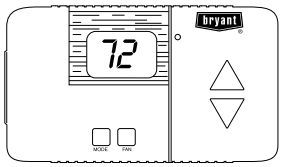
bryant
Heating & Cooling Systems

THERMOSTATS
THERMIDISTAT™ CONTROL

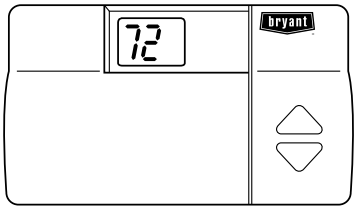
MODEL
TSTAT

BUILDER'S THERMOSTAT



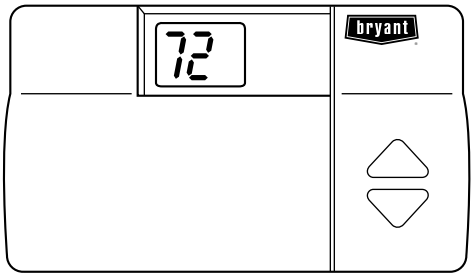
* Standard Model (AC, HP)

NON-PROGRAMMABLE THERMOSTAT



* Standard Model (AC, HP, 2S)

PROGRAMMABLE THERMOSTAT AND THERMIDISTAT™ CONTROL



* Standard Model (AC, HP, 2S)
* Dual Fuel Model (DF)
* Thermidistat™ Control Model (RH)

The Bryant electronic thermostat product line consists of programmable and non-programmable air conditioner, heat pump, and 2-speed models; a programmable dual fuel model; and a programmable/non-programmable Thermidistat™ Control. Bryant also offers builder's thermostats in both air conditioner and heat pump models. These units feature non-mercury based electronic controls built into a subtle, slim plastic enclosure. They require no battery back-up and the programmable/non-programmable models are not power stealing.

FEATURES/BENEFITS

BUILDER'S THERMOSTATS

COMPLETE OFFERING—Non-programmable air conditioner and heat pump models available.

EASY TO USE—Rubber push buttons provide easy changes to heating/cooling mode operation, fan operation, and desired temperature setting.

MANUAL CHANGEOVER—Allows manual switches in system operation when both heating and cooling are needed on the same day.

NON-PROGRAMMABLE THERMOSTATS

CLEAN DESIGN—Features soft, responsive buttons and an easy-to-read backlit Liquid Crystal Display (LCD).

ACCURATE, RELIABLE TEMPERATURE CONTROL—LCD shows current room temperature at all times, and desired temperature prompts upon demand.

AUTO CHANGEOVER—Switches system operation automatically when both heating and cooling are needed on the same day.

OUTDOOR TEMPERATURE DISPLAY—Allows a check of the temperature outside before leaving home. (Optional on all models except non-programmable air conditioner.)

CLEAN FILTER INDICATOR—Tells when it is time to clean the system's filter.

PERFECT COMPLEMENT—Completes your Bryant total comfort system needs.

LIMITED WARRANTY—Standard 1-year warranty available on all parts.

PROGRAMMABLE THERMOSTATS

Bryant programmable thermostats possess the same features as non-programmable thermostats plus:

COMFORT AND ENERGY SAVINGS—Seven day programming, with 4 temperature changes provided per day, means comfort when the family is at home and savings through reduced energy usage when the family is away or asleep.

EASY TO USE—Simple instructions are located inside the thermostat's door.

Form No. PDS TSTAT.0.2

DUPLICATE PROGRAMMING—Copy the comfort schedule from one day to the next using the copy previous day function.

OVERRIDE CAPABILITY—Hold function allows the regular schedule to be bypassed with a temporary setting.

BATTERY-FREE—Non-volatile RAM chip requires no battery backup. Program is retained in memory so reprogramming is not required after power loss.

TIMEGUARD—Equipment protection.

DUAL FUEL MODEL—The dual fuel thermostat can be used to control a gas furnace and a heat pump. This thermostat eliminates the need for an interface control kit.

THERMIDISTAT™ CONTROL

Bryant's Thermidistat Control can be used to control any equipment application except zoning. It possesses all the features and benefits of Bryant's non-programmable and programmable thermostats plus:

ENHANCED COMFORT—Allows the homeowner to accurately maintain the desired temperature and humidity settings in the home. By combining the functions of a programmable thermostat and a humidistat, the Thermidistat Control provides temperature control, humidity control, and dehumidification.

HUMIDITY CONTROL—The Thermidistat Control accurately controls humidity. It humidifies during heating and dehumidifies during cooling.

AUTOMATIC HUMIDITY ADJUSTMENT—When used with the outdoor temperature sensor, the Thermidistat Control automatically adjusts the humidity setting, reducing excess condensation on the windows.

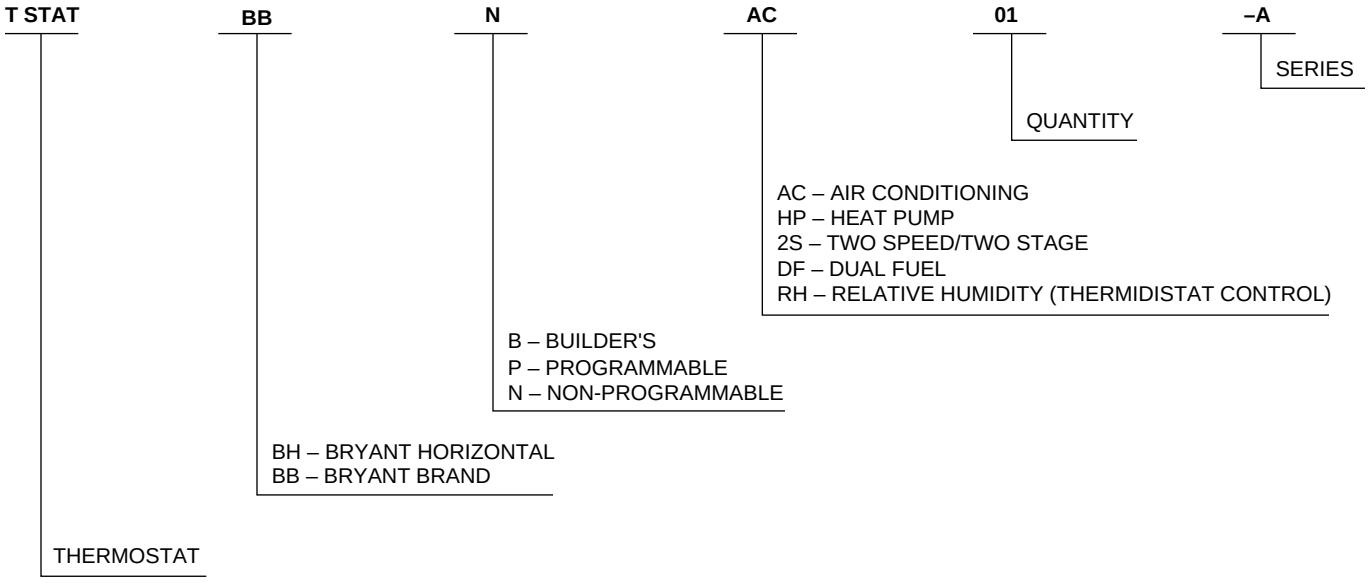
VACATION MODE—With a single touch of a button, vacation mode adjusts all comfort levels for optimum efficiency while the home is unoccupied—or restores the settings to normal upon return.

SMART RECOVERY—Provides consistent heating and cooling right on time as it gradually adjusts indoor temperatures before a scheduled change.

NON-PROGRAMMABLE OPTION—Offers the same popular humidity control benefits to consumers who do not need the added benefits of programming. Nine functional buttons, along with the UP and DOWN buttons, make it easy to enter the temperature and humidity set points. The LCD is the largest display on the market for a non-programmable thermostat.

MODEL NUMBER NOMENCLATURE

ELECTRONIC THERMOSTATS



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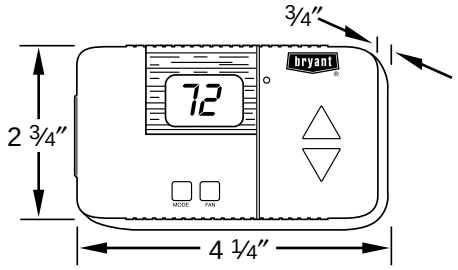
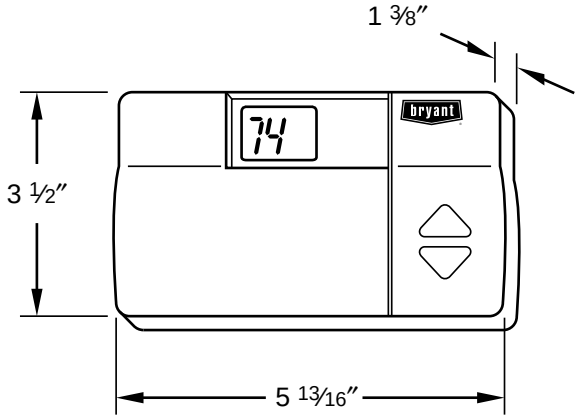
As an ENERGY STAR℠ Partner, Bryant Heating & Cooling Systems has determined that the programmable thermostats and programmable Thermidistat Control meet the ENERGY STAR guidelines for energy efficiency.

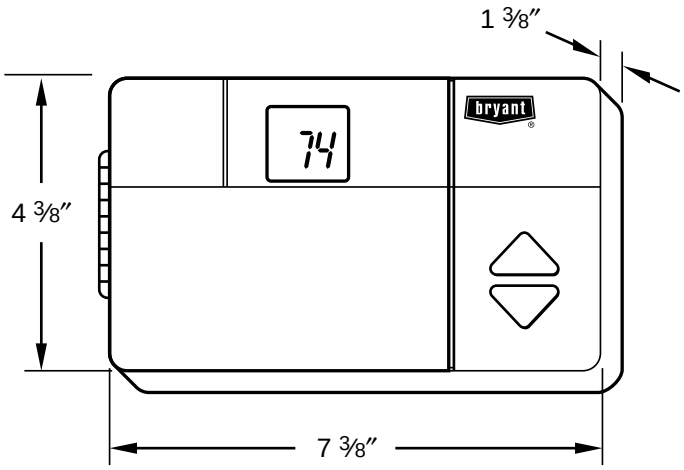
DIMENSIONS



Builder's Thermostat



Non-Programmable Thermostat



Programmable Thermostat and Thermidistat Control

A98300

PRODUCT DATA INFORMATION

PHYSICAL CHARACTERISTICS

Builder's Models:

Dimensions: See drawing
Appearance: Plastic, designer white, white rubber push buttons

Non-Programmable/Programmable Models:

Dimensions: See drawing
Appearance: Plastic, eggshell color, textured

ELECTRICAL CHARACTERISTICS

Builder's Models:

Input Volts/Amps: 24vac, 1 VA

Non-Programmable/Programmable Models:

Input Volts/Amps: 24vac, 5 VA

ENVIRONMENTAL REQUIREMENTS:

Operating Temperature/Relative Humidity: 32°F (0°C) to 104°F (40°C)/95% rh non-condensing
Storage Temperature/Relative Humidity: –40°F (–40°C) to 134°F (56°C)/95% rh non-condensing

PROGRAM SPECIFICATIONS:

Builder's Models:

Temperature set point range: 50°F (10°C) to 90°F (32°C)
Manual changeover
Non-volatile memory
Fahrenheit or Celsius selectable
Power-stealing option on AC model
Selectable fan ON or OFF with auxiliary heating (HP model)
Five-minute compressor timeguard
Four cycles per hour maximum
Auxiliary heat LED on heat pump models

Non-Programmable Models:

Temperature setpoint range: 40°F (4°C) to 90°F (32°C)
Separate heat and cool setpoints
Auto changeover
Clean filter reminder: installer adjustable
Permanent memory

Programmable Models:

Temperature setpoint range: 40°F (4°C) to 90°F (32°C)
Separate heat and cool setpoints
Auto changeover
Clean filter reminder: installer adjustable
Permanent memory
Programming days: 7 day
Programming periods: 4—Wake, Day, Eve, Sleep
Hold function
Copy previous day function
Humidity display and control (Thermidistat Control only)

WIRING REQUIREMENTS:

Power: 24vac nominal, 18- to 30-vac, 50/50 Hz
Wiring: Standard thermostat wire 18 to 22 gage.

DESCRIPTION

PROGRAMMABLE ELECTRONIC THERMOSTATS

PART NO.	DESCRIPTION
TSTATBHPAC01-A	Thermostat, Auto Changeover, 7-Day Programmable, °F/°C, 1-Stage Heat/1-Stage Cool
TSTATBHPHP01-A	Thermostat, Auto Changeover, 7-Day Programmable, °F/°C, 2-Stage Heat/1-Stage Cool
TSTATBHP2S01-A	Thermostat, Auto Changeover, 7-Day Programmable, °F/°C, 2-Stage Heat/2-Stage Cool in AC Mode, 3-Stage Heat/2-Stage Cool in HP Mode
TSTATBHPDF01-A*	Dual Fuel Thermostat, Must Be Used with Outdoor Air Temperature Sensor (TSTATXXSEN01)
TSTATBBPRH01-B*	Thermidistat Control — Non-Programmable/Programmable Thermostat with Humidity Control (For use in all Dual Fuel, AC, HP, and 2S applications. Includes Outdoor Air Temperature Sensor.)

NON-PROGRAMMABLE ELECTRONIC THERMOSTATS

PART NO.	DESCRIPTION
TSTATBHNAC01-A	Thermostat, Auto Changeover, Non-Programmable, °F/°C, 1-Stage Heat/1-Stage Cool
TSTATBHNHP01-A	Thermostat, Auto Changeover, Non-Programmable, °F/°C, 2-Stage Heat/1-Stage Cool
TSTATBHN2S01-A	Thermostat, Auto Changeover, Non-Programmable, °F/°C, 2-Stage Heat/2-Stage Cool in AC Mode, 3-Stage Heat/2-Stage Cool in HP Mode

BUILDER'S MODELS

PART NO.	DESCRIPTION
TSTATBBBAC01	Thermostat, Air Conditioner, Non-Programmable, 1-Stage Heat/1-Stage Cool, Manual Changeover, °F/°C
TSTATBBBHP01*	Thermostat, Heat Pump, Non-Programmable, 2-Stage Heat/1-Stage Cool, Manual Changeover, °F/°C

* Do not use in zoning heat pump applications.

THERMOSTAT ACCESSORIES

PART NO.	DESCRIPTION
TSTATXXSEN01*	Outdoor Air Temperature Sensor
TSTATXXNBP01†	Backplate for Non-Programmable Thermostat
TSTATXXPBP01†	Backplate for Programmable Thermostat and Thermidistat Control
TSTATXXCNV10‡	Thermostat Conversion Kit (4 to 5 wire) — 10 pack

* Outdoor air temperature sensor is an accessory for all Bryant electronic thermostats, except the non-programmable air conditioner version and builder's thermostats. It allows the temperature at a remote location (outdoors) to be displayed on the thermostat.
The outdoor air temperature sensor *must be* used with the dual fuel thermostat.
The outdoor air temperature sensor is included with the Thermidistat Control.

† Thermostat backplate can be used for programmable and non-programmable electronic thermostats only. This plate is designed to cover surrounding wall area located behind thermostat.

‡ Thermostat conversion kit is a 24-vac accessory that can turn a 4-wire thermostat application into a 5-wire application. This kit can also be used to replace a broken thermostat wire, or add an extra wire when needed.

THERMOSTAT AND THERMIDISTAT CONTROL APPLICATION

NON-PROGRAMMABLE THERMOSTAT USAGE

INDOOR UNIT	OUTDOOR UNIT			
	Air Conditioner		Heat Pump	
	1 Speed	2 Speed	1 Speed	2 Speed
1-Stage Furnace	Model AC or HP*	Model 2S	†	Model 2S‡
2-Stage Furnace	Model AC or HP*	Model 2S	†	Model 2S‡
Typical Fan Coil	Model AC or HP*	Model 2S	Model HP	Model 2S
FK Series Fan Coil	Model AC or HP*	Model 2S	Model HP	Model 2S

* Model HP thermostat must be field converted to air conditioner operation.
† Must use Programmable Dual Fuel Thermostat or Thermidistat Control in this application.
‡ Dual Fuel operation controlled by heat pump when using Model 2S Thermostat.

Non-Programmable Models

The TSTATBHNAC01-A Thermostat provides single-stage, non-programmable heat/cool temperature control for 24-vac heating-cooling systems with auto changeover. Temperature display can be selected to read °F or °C.

The TSTATBHNHP01-A Thermostat provides versatile 2-stage heating and single-stage cooling, non-programmable temperature control for 24-vac heating-cooling systems with auto changeover. Temperature display can be selected to read °F or °C. Thermostat comes factory set to operate as a heat pump model with second-stage controlling auxiliary electric heat. This model can easily be converted from heat pump operation to air conditioning operation requiring 2 stages of gas or electric heat.

The TSTATBHN2S01-A Thermostat provides versatile multiple stage, non-programmable heat/cool temperature control for 24-vac heating-cooling systems with auto changeover. Temperature display can be selected to read °F or °C. Thermostat is designed for 2-speed compressor bearing units. Thermostat comes factory set to operate as a heat pump model with 2-stage cooling and 3 stages of heat, third-stage controlling auxiliary electric heat. This model can easily be converted from heat pump operation to air conditioning operation requiring 2 stages of cooling and 2 stages of heating.

PROGRAMMABLE THERMOSTAT USAGE

INDOOR UNIT	OUTDOOR UNIT			
	Air Conditioner		Heat Pump	
	1 Speed	2 Speed	1 Speed	2 Speed
1-Stage Furnace	Model AC or HP*	Model 2S	Model DF	Model DF or 2S‡
2-Stage Furnace	Model AC or HP*	Model 2S	Model DF	Model DF or 2S‡
Typical Fan Coil	Model AC or HP*	Model 2S	Model HP	Model 2S
FK Series Fan Coil	Model AC or HP*	Model 2S	Model HP or 2S†	Model 2S

* Model HP thermostat must be field converted to AC operation.
† For use with special 3-stage electric heat setup.
‡ Dual Fuel operation controlled by heat pump when using Model 2S thermostat.

Programmable Models

The TSTATBHPAC01-A Thermostat provides single-stage, 7-day programmable heat/cool temperature control for 24-vac heating-cooling systems with auto changeover. Temperature display can be selected to read °F or °C.

The TSTATBHPHP01-A Thermostat provides versatile 2-stage heating and single-stage cooling, 7-day programmable temperature control for 24-vac heating-cooling systems with auto changeover. Temperature display can be selected to read °F or °C. Thermostat comes factory set to operate as a heat pump model with second-stage controlling auxiliary electric heat. This model can easily be converted from heat pump operation to air conditioning operation requiring 2 stages of gas or electric heat.

The TSTATBHP2S01-A Thermostat provides versatile multiple stage, 7-day programmable heat/cool temperature control for 24-vac heating-cooling systems with auto changeover. Temperature display can be selected to read °F or °C. Thermostat is designed primarily for 2-speed compressor bearing units. Thermostat comes factory set to operate as a heat pump model with 2-stage cooling and 3-stages of heat, third-stage controlling auxiliary electric heat. This model can also perform smart-staging with FK fan coils (special heaters and setup required) using a single-speed heat pump with 3-stages auxiliary electric heat. In addition, this model can easily be converted from heat pump operation to air conditioning operation requiring 2 stages of cooling and 2 stages of heating (e.g. gas or electric heat).

Programmable Dual Fuel Model

The TSTATBHPDF01-A Thermostat provides single-stage or multiple-stage dual fuel operation, 7-day programmable heat/cool temperature control for 24-vac systems with auto changeover. Temperature display can be selected to read °F or °C. The Dual Fuel Thermostat is designed with an adjustable balance point for heat pumps when using a gas furnace for backup or auxiliary heat. Thermostat comes factory set to operate single-speed equipment, but is easily configured to match multiple stage equipment combinations. This model requires use of the Outdoor Air Temperature Sensor accessory. Using the dual fuel thermostat eliminates the need for an interface control.

THERMIDISTAT CONTROL USAGE

INDOOR UNIT	OUTDOOR UNIT			
	Air Conditioner		Heat Pump	
	1 Speed	2 Speed	1 Speed	2 Speed
1-Stage Furnace	Model RH*			
2-Stage Furnace				
Typical Fan Coil				
FK Series Fan Coil				

* The Thermidistat Control may be used in all applications but must be field configured for specific application.

Thermidistat Control

The TSTATBBPRH01-B Thermidistat Control provides single-stage or multiple-stage equipment operation, 7-day programmable heat/cool temperature control for 24-vac systems with auto changeover. It controls both humidification and dehumidification and can be used to control heat pumps, air conditioners, or dual fuel applications. Temperature display can be selected to read °F or °C. The Thermidistat Control is designed primarily as an extension of the programmable thermostat line to provide humidify and dehumidify outputs in controlling humidity. It can also be field configured to be non-programmable. Humidify outputs connect directly to 24-v humidifiers. Dehumidify outputs connect directly to variable-speed furnaces or fan coils that have dehumidification capabilities. To achieve full benefits, this model requires use of the Outdoor Air Temperature Sensor accessory, which is included with the Thermidistat Control.

OPERATIONAL INFORMATION

FIVE-MINUTE COMPRESSOR TIMEGUARD

This timer prevents the compressor from starting unless it has been off for at least 5 minutes. It can be defeated for 1 cycle by simultaneously pressing the FAN mode button and INCREASE TEMPERATURE (UP) button.

FIFTEEN-MINUTE CYCLE TIMER

This timer prevents the start of a heating or cooling cycle until at least 15 minutes after the last start of the same cycle. Its function is to assure that equipment is not cycled more than 4 times per hr. This timer is defeated for 1 cycle when the desired temperature is manually changed. It can also be defeated for 1 cycle by simultaneously pressing the FAN mode button and INCREASE TEMPERATURE button.

FIFTEEN-MINUTE STAGING TIMER

In multistage heating or cooling, this timer prevents any higher stage from turning on until preceding stage has been on for 15 minutes. This timer is defeated if temperature error is greater than 5°F (usually due to a large change in desired temperature).

MINIMUM ON TIME

In normal operation, when a stage turns on, it will not turn off for a minimum of 2 minutes (3 minutes on Thermidistat Control).

HEAT/COOL SETPOINTS (DESIRED TEMPERATURE)

A minimum difference of 3° is enforced between heating and cooling desired temperatures. This is done by allowing 1 setting to “push” the other, to maintain this difference. (Thermidistat Control 2° and adjustable.) Builder’s thermostats are controlled by a single set point.

EQUIPMENT ON INDICATORS (THERMIDISTAT CONTROL)

When cooling equipment is ON, a COOL icon preceded by a small triangle is displayed below the cool setpoint. While cooling equipment turn on is delayed by a staging or cycle timer, the triangle will be flashing. The same is true for the HEAT icon and its preceding triangle located under the heat setpoint. These 2 triangles are also used to indicate the state of the humidify and dehumidify outputs. See next section.

HUMIDIFY/DEHUMIDIFY OUTPUT ON INDICATORS (THERMIDISTAT CONTROL)

Within humidity select screen (selected by Humidity button and indicated by “hu” or “dhu” on clock display), the triangle under humidity setpoint will be on while humidify output is on. The triangle under dehumidify setpoint will be on while dehumidify output is active (turned off, because this output is reverse logic).

AUTO CHANGEOVER

When auto changeover mode is selected, a change from heat to cool (or vice versa) will not occur until an opposite mode demand has existed for 20 minutes. If setpoint is changed, the 20 minute requirement is deleted. Builder’s thermostats are manual changeover.

EMERGENCY HEAT MODE

When thermostat is controlling as a heat pump and emergency heat is selected, all Y signals are locked out, and W becomes energized upon a call for heat.

SMART RECOVERY (PROGRAMMABLE MODELS)

With Smart Recovery selected, transition out of setback begins a fixed time period before selected recovery time and gradually adjusts room temperature so that the desired temperature will be achieved at selected recovery time.

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SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

UNIT MUST BE INSTALLED IN ACCORDANCE
WITH INSTALLATION INSTRUCTIONS

Cancels: PDS TSTAT.0.1

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